Appl. No. 09/758,484
Amdt. Dated September 30, 2004
Reply to Office action of July 19, 2004

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:.

Listing of Claims:

1.   (currently amended) A packet optimization method comprising:

generating a metric to indicate a channel condition based on an estimated error rate;

processing the metric to determine optimal packet-size for the channel condition; and

choosing the optimal packet-size corresponding to the processed metric to send to a requestor.

2.   (original) The packet optimization method of claim 1, wherein processing further includes:

receiving the metric corresponding to the channel condition; and

using the received metric to balance a trade-off between the cyclic redundancy check and re-transmission overhead.

3.   (original) The packet optimization method of claim 1, wherein choosing the optimal packet further includes training a neural network or look-up table to optimally improve system data throughput by selecting a packet corresponding to the channel condition.

4.   (currently amended) The packet optimization method of claim 1, wherein the optimal packet-size is being a packet-size that minimizes both cyclic redundancy check and re-transmission overhead.

5.   (currently amended) The packet optimization method of claim 1, wherein the metric being a frame error rate estimated error rate is a weighted combination of a frame error rate (FER), a signal to noise ratio (SNR) estimate, an energy per bit (Eb)/ thermal noise (Nt) estimate, and a system time or finger time drift rate.

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6.   (currently amended). The packet optimization method of claim 1, wherein the estimated error rate is ~~metric being a function of a packet error rate~~ selected from a group consisting of frame error rate (FER), signal to noise ratio estimate (SNR), energy per bit (Eb) / Thermal noise (Nt) estimate, and system time or finger time drift rate.

7.   (currently amended) . An apparatus comprising:
a memory to store a metric and packet; and
a processor to generate a metric indicating a channel condition based on an estimated error rate, to process the metric to determine optimal packet-size for the channel condition, and to choose the optimal packet-size corresponding to the processed metric to send to a requestor.

8.   (currently amended) . The apparatus of claim 7, wherein the processor receives ~~is to receive~~ the metric corresponding to the channel condition, and use the received metric to balance trade-off between the cyclic redundancy check and re-transmission overhead.

9.   (currently amended) The apparatus of claim 7, wherein the processor trains ~~is to train~~ a neural network or look-up table to optimally improve system data throughput by selecting a packet corresponding to the channel condition.

10.   (currently amended) The apparatus of claim 7, wherein the processor chooses ~~is to choose~~ an optimal packet-size that minimizes both cyclic redundancy check and re-transmission overhead.

11.   (currently amended) The apparatus of claim 7, wherein the processor ~~is to~~ computes ~~use~~ the estimated error rate ~~metric corresponding to frame error rate~~ as a weighted combination of a frame error rate (FEF), a signal to noise ratio (SNR) estimate, an energy per bit (Eb)/ thermal noise (Nt) estimate, and a system time or finger time drift rate.

12.   (currently amended) The apparatus of claim 7, wherein the estimated error rate is one of a ~~metric being a function of a packet error rate selected from a group consisting of~~ frame

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error rate (FER), a signal to noise ratio estimate (SNR), an energy per bit (Eb) / Thermal noise (Nt) estimate, and a system time or finger time drift rate.

      13.   (currently amended) A storage medium having stored therein a plurality of machine executable instructions, wherein when executed, the instructions performing operations perform a method comprising:

        generating a metric to indicate a channel condition based on an estimated error rate;

        processing the metric to determine optimal packet-size for the channel condition; and

        choosing the optimal packet-size corresponding to the processed metric to send to a requestor.

      14.   (currently amended) The storage medium of claim 13, wherein the instructions performing processing the metric comprises instructions, when executed, performing operations comprising processing further includes:

        receiving the metric corresponding to the channel condition; and

        using the received metric to balance trade-off between the cyclic redundancy check and re-transmission overhead.

      15.   (currently amended) The storage medium of claim 13, wherein the instructions performing choosing the optimal packet comprises instructions, when executed, performing operations comprising further includes training a neural network or look-up table to optimally improve system data throughput by selecting a packet corresponding to the channel condition.

      16.   (currently amended) A method of preventing system overload in a base station or mobile data transmission system comprising:

        estimating likelihood of packet transmission error in a system;

        determining a radio link protocol (RLP) packet-size corresponding to the estimated likelihood of packet transmission error; and

        sending a the RLP packet having size corresponding to the RLP packet-size to a base station or mobile data transmission system.

17.   (currently amended) The method of claim 16, wherein determining the RLP packet-size further includes:

allowing a base station or mobile data transmission system to request a change for the RLP packet-size; and

selecting the [[a]] RLP packet from a predetermined table that corresponds in size to the size requested by the base station or mobile data transmission system.; and

~~sending the selected RLP packet to the base station or mobile data transmission system.~~

18.   (currently amended) The method of claim 17, wherein the base station or mobile data transmission request is ~~being~~ limited to a predetermined number of requests.

19.   (currently amended) An apparatus comprising:

a memory to store ~~an~~ RLP packets ~~packet~~; and

a processor to estimate likelihood of packet transmission error in a system, to determine a radio link protocol (RLP) packet-size corresponding to the estimated likelihood of packet transmission error, and to send a ~~the~~ RLP packet having size corresponding to the RLP packet-size to a base station or mobile data transmission system.

20.   (currently amended) The apparatus of claim 19, wherein the processor allows ~~is to allow~~ a base station or mobile data transmission system to request a change for the RLP packet-size, and selects the ~~to select~~ [[a]] RLP packet from a predetermined table that corresponds in size to the size requested by the base station or mobile data transmission system; ~~and to send the selected RLP packet to the base station or mobile data transmission system~~.

21.   (currently amended) The apparatus of claim 20, wherein the processor limits ~~is to limit~~ the request from the base station or mobile data transmission to a predetermined number of requests.

22.   (currently amended) A storage medium having stored therein a plurality of machine executable instructions, wherein when executed, the instructions performing operations ~~perform a method~~ comprising:

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estimating likelihood of packet transmission error in a system;

determining a radio link protocol (RLP) packet-size corresponding to the estimated likelihood of packet transmission error; and

sending a ~~the~~ RLP packet having size corresponding to the RLP packet-size to a base station or mobile data transmission system.

23.   (currently amended) The storage medium of claim 22, wherein the instructions performing determining the RLP packet-size comprises instructions, when executed, performing operations comprising ~~further includes~~:

allowing a base station or mobile data transmission system to request a change for the RLP packet-size; and

selecting the [[a]] RLP packet from a predetermined table that corresponds in size to the size requested by the base station or mobile data transmission system.~~; and~~

~~sending the selected RLP packet to the base station or mobile data transmission system.~~

24.   (currently amended) The storage medium of claim [[22]] 23, wherein the base station or mobile data transmission system is ~~request being~~ limited to a predetermined number of requests.

25.   (original) A method of optimizing packet-size comprising:
storing at least one radio link protocol (RLP) packet in a physical layer; and
predetermining the RLP packet-size by empirical experimentation.

26.   (currently amended) The method of claim 25, wherein pre-determining the RLP packet-size comprises: ~~the empirical experimentation includes~~
simulating a condition with a particular metric value;
adjusting packet-size manually corresponding to the metric value; and
recording packet-size data for the metric value to obtain maximum system throughput.

27.   (currently amended) The method of claim 25, wherein the predetermining comprises ~~further includes~~ storing a metric value in a lookup table and obtaining an optimum packet-size corresponding to the stored metric value.

28.   (original) The method of claim 25, wherein the RLP packet includes cyclic redundancy check bits to provide error-checking capability for the RLP packet.

29.   (currently amended) An apparatus comprising:
        a memory to store an radio link protocol (RLP) packet, and data from an empirical experimentation ~~data~~; and
        a processor to store at least one RLP packet in a physical layer, and to predetermine the RLP packet-size by the empirical experimentation.

30.   (currently amended) The apparatus of claim 29, wherein the processor to perform the empirical experimentation simulates ~~is to simulate~~ a condition with a particular metric value, adjusts ~~to adjust~~ packet-size manually corresponding to the metric value, and records ~~to record~~ packet-size data for the metric value for obtaining maximum system throughput.

31.   (currently amended) The apparatus of claim 29, wherein the processor stores ~~is to store~~ a metric value in a lookup table and obtains ~~is to obtain~~ an optimum packet-size corresponding to the stored metric value.

32.   (original) The apparatus of claim 29, wherein the RLP packet includes cyclic redundancy check bits to provide error-checking capability for the RLP packet.

33.   (currently amended) A storage medium having stored therein a plurality of machine executable instructions, wherein when executed, the instructions perform operations ~~a method~~ comprising:
        storing at least one radio link protocol (RLP) packet in a physical layer; and
        predetermining the RLP packet-size by an empirical experimentation.

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34.   (currently amended) The storage medium of claim 33, wherein the <u>instructions</u> <u>performing predetermining the RLP packet-size comprises instructions, when executed,</u> <u>performing operations comprising:</u> ~~empirical experimentation includes~~
    simulating a condition with a particular metric value;
    adjusting packet-size manually corresponding to the metric value; and
    recording packet-size data for the metric value to get maximum system throughput.

35.   (currently amended) The storage medium of claim 33, wherein the <u>instructions</u> <u>performing predetermining the RLP packet-size comprises instructions, when executed,</u> <u>performing operations comprising</u> ~~predetermining further includes~~ storing a metric value in a lookup table and obtaining an optimum packet-size corresponding to the stored metric value.

36.   (original) The storage medium of claim 33, wherein the RLP packet includes cyclic redundancy check bits to provide error-checking capability for the RLP packet.